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DIVISION OF FOREST PEST CONTROL

Northeastern Area State & Private Forestry

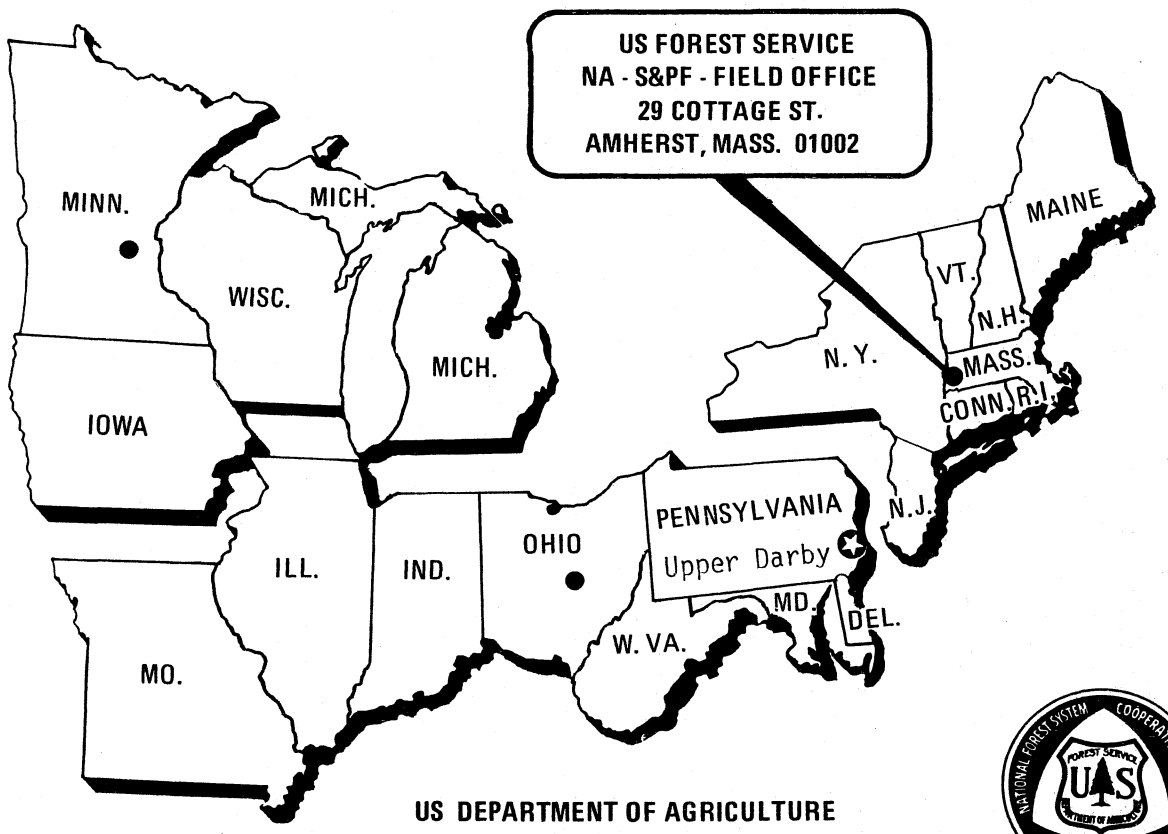
A-69-11 5230

GYPSY MOTH EGG MASS SURVEY

Saco Ranger District, White Mountain National Forest

Robert P. Ford

October 1969



US DEPARTMENT OF AGRICULTURE
FOREST SERVICE

ABSTRACT

Gypsy moth egg masses were found on 10 acres at Hales Location and on about 500 acres of Sugarloaf Mountain along the southeast slope. Oak trees along Birch Hill Road will be defoliated in 1970. Less than 25% defoliation is expected in each area in 1970. Natural controls are expected to suppress the outbreak within two years.

INTRODUCTION

In early October, 1969, Vaughan McCowan and Robert Ford made a survey to determine the potential for defoliation by gypsy moth in the Hales Location and Albany portions of the Saco Ranger District. The infestations had been reported by Tom Emerson, Forester on the District. Defoliation in 1969 was negligible on the District but was severe on adjoining private lands to the southeast where about 15,000 acres were effected.

Gypsy moth has not reached outbreak proportions on the Saco Ranger District in the last 10 years. Records of prior infestations are not available.

SURVEY METHODS

The tenth-acre plot method was combined with scouting for this survey. Three plots were established at Hales Location and eight plots were checked at Albany. All egg masses that could be seen were counted, multiplied by four, then converted to acre counts. The increase factor was used because bark flaps, tall trees, hollow trees, and other features hid about three-quarters of the egg masses. Experience has determined that this factor is acceptable for use in the tenth-acre plot method.

SURVEY RESULTS

First instar larvae were evidently wind-blown into the area from heavy infestations in the southeast. This is a reasonable conclusion since no old egg masses or pupae were found.

At Hales Location there are about 110 egg masses of average size per acre. The trees are mostly saplings and poles of beech, birch and maple. Basal area (two inches d. b. h. and larger) is 110 square feet per acre. The infestation is confined to an area of about 10 acres.

At Albany, egg mass counts along Birch Hill Road averaged 920 masses per acre. Most of the egg masses were found on large (12 inches d. b. h. plus) oak trees located within two chains of the road. Only scattered individual egg masses were found in the beech stand situated on the southwest slope of Sugarloaf Mountain.

TECHNICAL INFORMATION

Causal Agent

Gypsy Moth, *Porthetria dispar* (L.)

Host Trees

Mixed oak, *Quercus* spp.; beech, *Fagus grandifolia*; white pine, *Pinus strobus*; and birch, *Betula* spp., are preferred hosts. These species; sugar maple, *Acer saccarhum*; and the resistant red maple, *A. rubrum*, are the major tree species.

Type of Damage

Feeding by the caterpillars occurred on less than 10% of the foliage in 1969.

Tree mortality caused by gypsy moth defoliation has not been common in New England in recent years. Other effects on the trees have not been quantitatively demonstrated. Gypsy moth caterpillars present a nuisance for recreationists and may cause a rash on some people who handle them.

Ecological Factors

Ooencyrtus kuwanai, a major egg parasite, was not found. One *Apanteles* sp. cocoon and one parasitized pupa were found at Hales Location. Three pupae were infected by a fungus.

The egg masses appeared healthy, with most eggs being viable according to field observation.

Most egg masses were located well above snowline where they will be subject to low temperatures. Thirty hours of -25°F. or lower will kill exposed eggs. These low temperatures are frequently observed in this area.

Extent of Outbreak and Location

About 10 acres at Hales Location and 500 acres at Albany are infested. Only some 50 acres along Birch Hill Road are heavily infested.

The infestations are in the southern part of Hales Location and on the southeast slope of Sugarloaf Mountain in Albany (see maps).

The present infestations are located away from trails and other facilities used by the public. It is also difficult to see the defoliation areas from the highway.

DISCUSSION

Eighty percent defoliation by gypsy moth is expected along the northwest side of Birch Hill Road in 1970. The southeast slope of Sugarloaf Mountain will be less than 25% defoliated with some individual trees (mostly beech) being 80% defoliated. Defoliation should be about 10% to 20% at Hales Location in 1970.

In recent years, gypsy moth infestations in New England have remained in a stand for a year or two before wilt disease decimated the population. Predators and parasites are well-established in New England and can be expected to follow closely behind any outbreak of gypsy moth.

Present infestations can be expected to spread and light populations expected to increase next year if favorable weather conditions prevail for the insect. Natural controls should prevail after 1971 or 1972.

Timber harvested from infested areas should be utilized within the gypsy moth quarantine area. Information on this may be obtained from the Agriculture Research Service.

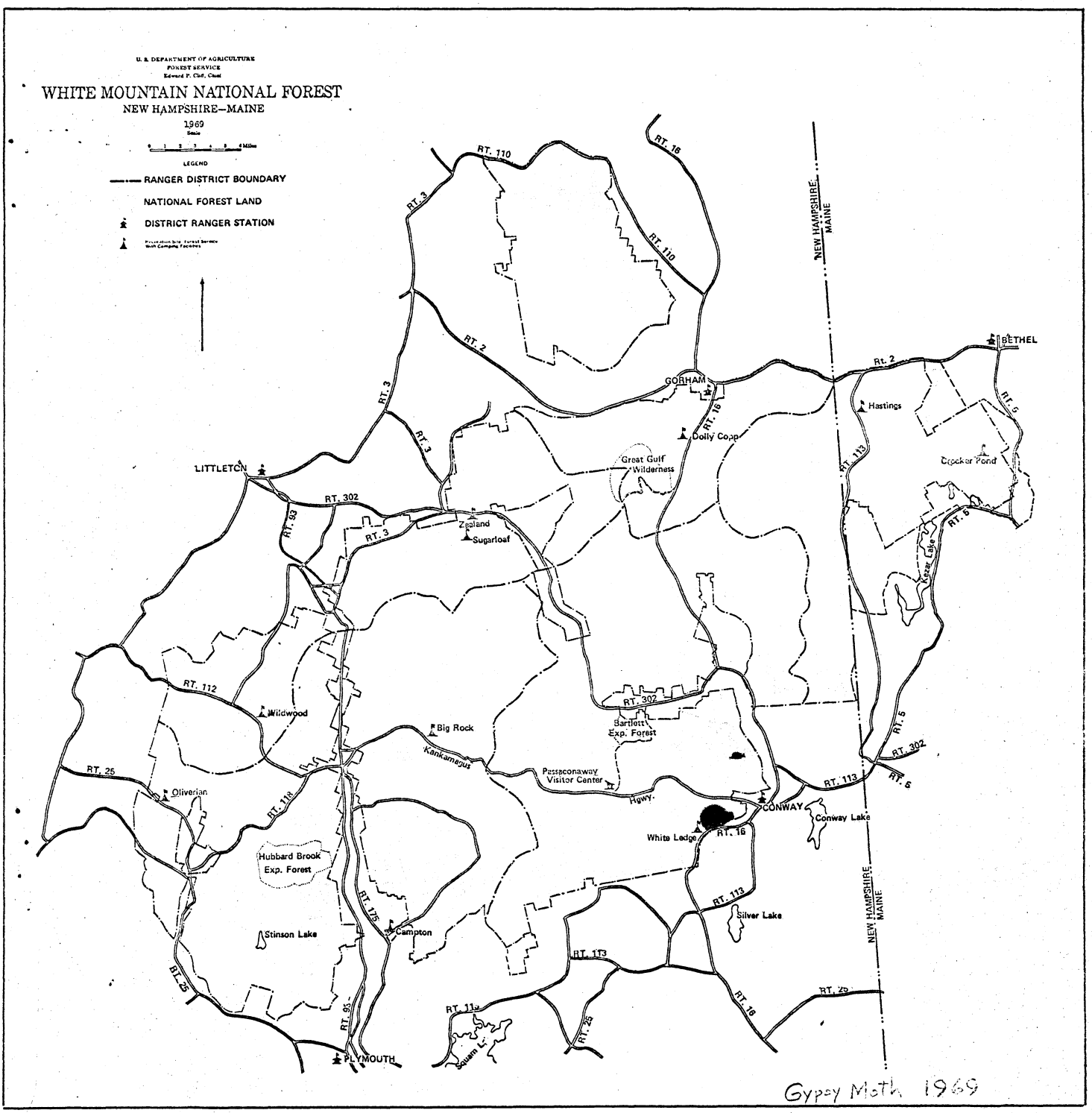
Larval populations may be suppressed but not eradicated by the application of 1 1/4 pound of 80% carbaryl (Sevin) plus a sticker in two gallons of water spray per acre. Application is in mid-May when the insects are in the second and third instars.

RECOMMENDATIONS

There are two alternatives to treatment of this infestation in 1970, and they are:

1. Do nothing. The present infestation is light and will cause a minimum amount of defoliation in 1970. Cold weather, wilt, and parasites will likely reduce the population to endemic levels.

2. Apply insecticide to prevent continued buildup of gypsy moth next year. Foliage protection will be realized but tree mortality will not be a factor with or without spraying.



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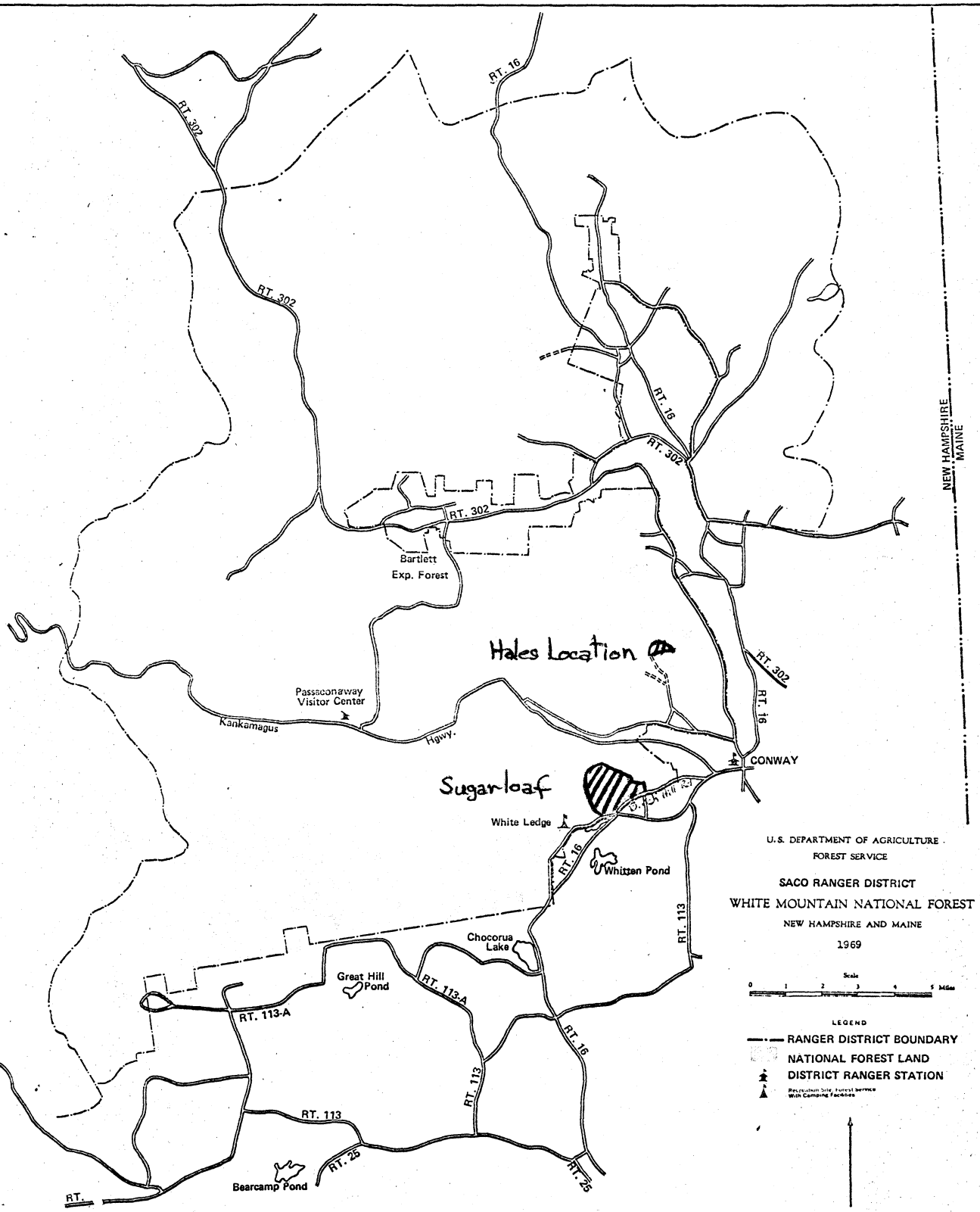

Gypsy Moth 1969

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